CHANGING FISHERIES ECOLOGY IN THE HADEJIA-NGURU WETLANDS

[DRAFT CIRCULATED FOR COMMENT]

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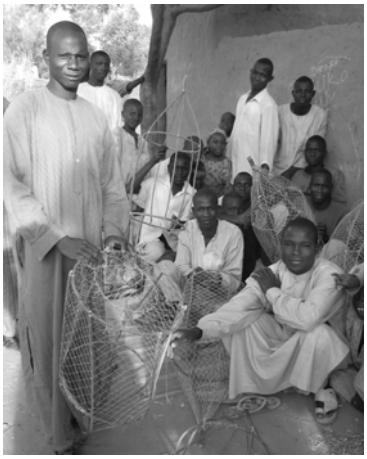
Overview

The Hadejia-Nguru wetlands is a rich source of biodiversity as well as a major economic resource for those who inhabit it. The principal means of subsistence are fishing and farming and it supplies protein to a wide range of populations outside the core area. However, the drying up of the wetlands and the spread of destructive extractive techniques for fishing has caused both the numbers and variety of fish populations to decline rapidly during the 1990s. The most significant account of the fisheries of Northern Nigeria remains Reed et al. (1967). The Sahelian waterways of the Chad Basin contain numerous species and traditions agree that catches were abundant and average size of the fish large. The fish resources of the Hadejia-Nguru wetlands are still extensive, but the present-day diversity must be only a fraction of that which occurred prior to the Challawa Gorge impoundment.

Photo 1. *mali* fish-traps



A survey by Jimoh (1989:2) recorded some nineteen species as regularly caught in the wetlands, but notes that a survey some fifteen years earlier had recorded forty-four species. Thomas et al. (1993) and Thomas (1995) describe the fisheries of the Hadejia-Nguru wetlands as they appeared in the early 1990s and they show many similarities to Lake Chad. The start of the dry season is usually deemed best for fishing, as fish leave the flooded plains and return to the main watercourses. Nonetheless, increasing pressure has ensured that fishing takes place throughout the year. Very little modern fishing gear is used; and most canoes are still not motorised; poison and dynamite are hardly used. Interviews with fishermen in 1998, reported in Rowley and Winter, suggest that there had been further decline in fish diversity and fish sizes. Some fishermen report catches made up of only three or four species.

The diversity of fishing gear seems to have been reduced since earlier surveys. The *mali* (Photo 1) is a frame-trap which originated in Mali and has spread widely across the Sahel. The webbing is currently made from nylon, which makes it more durable. Many other fish traps, as described in Reed et al. (1967) seem to have disappeared.

Jimoh (1989) surveyed a wide range of communities to examine the fish species that were disappearing during the 1980s. Jimoh (1989:28) reports that following species were recorded as disappearing in most of his sample villages when he undertook his survey; *Citharinus citherus, Gymnarchus niloticus, Channa obscura, Heterotis niloticus, Lates niloticus, Hydrocynus vittatus, Polypterus senegalus*. With one exception, *Heterotis*, this is repeated by the current list; the difference, however, is that many more species are now recorded as absent. In one village, Dagona, well-known for its almost-vanished wildfowl sanctuary, fishing is now a historical or migratory profession, upstream water abstraction having dried up all the water-bodies near the village.

It seemed worthwhile to repeat his survey, albeit on a smaller scale, to see what trends emerged. Table 1 is a composite table of fish names in the three major languages of the wetlands, Hausa, Manga and Bade. The identifications come from Holden & Reed (1972) cross-checked with Reed et al. (1967). The data in Table 1 comes from four villages, Dabar Magani, Matara Uku, Dumsai and Dagona[1]. The principal languages spoken in these villages are;

6/2/03	Dabar Magani	Hausa
7/2/03	Matara Uku	Manga
8/2/03	Dumsai	Bade
25/2/03	Dagona	Bade

In Table 1 I have extracted some Manga fish names from Jarrett (n.d.) which are not reflected in the data.

[1] I would particularly like to thank the Lawan of Dagona, who arranged a meeting for our team in his village and gathered a group of knowledgeable elders to discuss fish names.

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Table 1. Comparative fish names in three languages

Observations on the presence of these species in 2003 in the Hadejia-Nguru wetlands

Scientific name	English	Hausa	Manga	Bade	Present in 2003?	Picture
	fish (general)	kíífíí	**búnì**			
		?		kur cibil		
		kanze		awgirin		
		kúřúƙúllìì		amimiwal		
Hepsetus odoe	African pike		kiribuni	njig duwaŋ	No	HR27/28
Labeo coubie	African carp				No	HR38
Synodontis spp.	catfish	ƙùrúngùù			No	HR56-8
Citharinus citherus, C. latus	moonfish	báánàà	palewal	kalafan	No	HR30
Hemichromis bimaculatus, H. fasciatus	jewelfish	bakar				HR70
Heterotis niloticus	bony tongue	bářgìì	baya	ufdakon ebugancen	Yes	HR9
Mormyrus macrophthalmus		burar buzu		patima kururun		
Labeo senegalensis	African carp	búrdòò	bəskəm	gadabdan	No	HR36
Marcusenius ihyuysi		dagari	lamsa	gulen ak dakwan	Yes	HR16
Epiplatys spp., Aplocheilichtys spp.	killifish,/panchax, toothed carp	dankya akunu				HR74-5
Barbus spp.	barb	digila bakin burdo	bəskəm cilim	buk zəmən	only seen near Geidam	HR39
Brycinus leuciscus	African tetras	dindukuri	məɗì	wasan	No	HR26
Oreochromis aureus (formerly *Tilapia aurea*)	tilapia	duguru	kawowo	kafakun	Yes	HR65
Parachanna obscura	snakehead	dúmnóó	dumno	mudugun	No	HR67
Clarias submarginatus	catfish	dundin				
Clarotes sp. ? error	?	dùrùdúrùù				
Labeo sp.	African carp	ɗán dáátàà				
Citharinus citherus, C. latus	moonfish	fàlfàl	fálfàl			
Sarotherodon galileus (formerly *Tilapia galilea*)	tilapia	fárín wala	holo	kafakun heta	Yes	HR63
Protopterus annectens	lungfish	gáìwáá	ambu	ambun	Yes	HR3

Scientific name	English	Hausa	Manga	Bade	Present in 2003?	Picture
Heterobranchus bidorsalis		gara raka (?)	?	məsan		HR41a
Polypterus spp.	bichir fish	gàřgázáá, garza	bàràkádí	awiɗon	No	HR7
Lates niloticus	Nile perch	gííwář rúwáá ɓáríyàà	ɓariya	kaɓəlin	No	HR62
Mormyrus isidori	?	hààlàɓà				
Clarias sp.	catfish	jàřií	ari	aalan	Yes	HR40
Brycinus macrolepidotus	African tetras	kándáuřákàà	?	?	No	HR23
Icthyborus besse	? but cf. 'otter'	kàren rúwáá				
Tilapia spp.	tilapia	kárfásáá		ɗiɗikir	Yes	
Distichodus spp.	grasseater	káwsàà		kaskasan		HR33
Tetraodon fahaka	puffer-fish	cihaki kómbání	kube	kuɗiɗin	No	HR68
				məfkətən, məkfətən		
Dasiatys garouenesis	dotted ray	kunaman rúwáá		wurjik duwan		
Mormyrus rume	elephant-snout fish, trunkfish	lámsàà				HR11
Parailia pellucida		lapar	lapar	kalapar	Yes	HR45
Schilbe spp.	butterfish	lûlúú mai kaya	lulu	ganun		HR42
Chrysicthys sp.		mai barewa				
Tilapia zilii	tilapia	mai gidan gaci karfasa shuri	kawowo	kafakun suk jijin	Yes	HR66
Heterobranchus spp.		mài leemu	?	?		HR41b
Malapterurus electricus	electric catfish	mínjíryáá	muu	mjaŋ, njan	Yes	HR61
Bagrus filamentosus	silver catfish	mumfal [?]				
Bagrus bayad, B. docmak	silver catfish	múskòò	mazambale	masamanin	Yes	HR47
Marcusenius cyprinoides		paya	paya	takɗo	No	HR15
Brycinus baremose	African tetras	sááróó	saraŋ	zantarin saaron	No	HR25
Oreochromis niloticus (formerly *Tilapia*	tilapia	sakiya	kawowo	andalon	Yes	HR64

Scientific name	English	Hausa	Manga	Bade	Present in 2003?	Picture
nilotica)						
Mormyrus sp.		sááwáyàà				
Siluranodon auritus		sháŋsháŋ[2]	?	?		HR44
Clarias sp.	catfish	tářwáɗáá	bigiri	məsan	Yes	HR40
Marcusenius abadii		táátàř	lamsa	kurinyin	Yes	HR18
Campylomormyrus tamandua		tola kánzáyíí	sawaya tólà	sawayen, tərwən	Yes	HR17
Hydrocynus vittatus	tiger-fish	tságíí	jay kərì shéɾìà	dlayad, dleyal, jik duwan	No	HR21
Brycinus nurse	African tetras	ƙááwàráá	deda	zharwon, saron	No	HR25
Chrysicthys nigrodigitatus, C. auratus		ƙàrááyáá	ŋgaya	dumdumi, gajakan	Yes	HR49
Auchenoglanis occidentalis, A. biscutatus	catfish	yàunií	ŋgaya	kazhakat	Yes	HR50
Clarotes laticeps		zářé				HR48
Gymnarchus niloticus		zááwàà	kaaz	məzəman	No	HR20
Tylochromis spp.						
Fish names from Jarrett (ined.)			fùyé gàɾìngó kàyâ kəmúdò kùyé náwúɾí nòwòɾí síllà búnìye			
	catfish					
Non-fish						
oyster ?	oyster	ƙwándá		gakan	Yes	
leech	leech	matatsaku		ɓiɗon		
toad		kwààɗóó		iŋgacan		
frog				uŋgurɗiɗin		
snail		dódón gori		gatantawan		
tortoise		kùnkúrúú		kuɗən		

[2] Given as *Synodontis sp.* in other sources

Scientific name	English	Hausa	Manga	Bade	Present in 2003?	Picture
turtle		ƙìfíífíyàà		arawul		
hippo		ɗòòrínáá		nsan		
clam		kurukudu		tak dukun		
bivalve		mai kankare		ɓəɗərin		
Lutra spp.	otter	kárén rúúwáá	iloŋ	ilol		

HR = Holden & Reed (1972)

N.B. Alestes spp. are now known as *Brycinus*.